

PROCEEDINGS
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NEW MARINE MOLLUSKS FROM THE PHILIPPINE
ISLANDS.

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Among a lot of marine mollusks submitted to the United States National Museum for determination by correspondents from the Philippine Islands, are a number of new forms. Most of these were discovered by Mr. C. M. Weber, in the southern Palawan region, while the beautiful little *Columbella deveyrai* comes from the Batanes Island, in the northern end of the Archipelago.

Oliva episcopalis philippinensis, new subspecies.

Two *Olivas*, Cat. No. 219,048, U. S. N. M., collected by Mr. Weber at Bancalan and Balabac Islands, differ decidedly from the typical form, being much smaller and more elevated and also more darkly colored. I therefore believe that they merit subspecific distinction. Both of them have lost the extreme tip.

The type has seven whorls remaining, and measures: length, 41.8 mm.; diameter, 17.1 mm. The other specimen, which has 6.5 whorls remaining, measures: length, 40.6 mm.; diameter, 17.5 mm.

Oliva tricolor palawanensis, new subspecies.

Mr. Weber has sent us two very remarkable shells from Roughton Island, Collector's No. 83A, Cat. No. 219,049, U. S. N. M. These, while agreeing with *Oliva tricolor* in outline, completely lack the olive green ground color peculiar to that species. This is replaced by a creamy white tint; the rest of the markings are axial rows of dots of yellow and blue. The maculations on the spire are similar to those of the typical form. The interior is deep purple. This form is so striking that I deem it desirable to bestow a name upon it.

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Were it not for the deep purple interior, I would be inclined to consider these albinistic specimens of *Oliva tricolor*, but the color of the interior leads me to believe that we are dealing with a distinct race.

***Mitra nigrیتella*, new species.**

Shell very elongate ovate, very dark brown excepting a narrow white zone which encircles the whorls immediately above the periphery. Nuclear whorls well rounded, feebly, roundly shouldered at the summit. Post-nuclear whorls marked by rather strong moderately broad, almost vertical axial ribs, which are eroded on the earlier turns but of which eighteen occur upon the fourth, twenty upon the remaining turns, of the type. In addition to the axial ribs which extend feebly to the very apex of the base on the last turn, the entire surface is marked by fine lines of growth. The spiral sculpture consists of slightly sinuous threads which are equal and sub-equally spaced. Of these threads, eight occur between the summit and the suture on the last turn. Suture strongly marked. Base marked in addition to the continuations of the axial ribs on the anterior half by nine spiral threads equalling those of the spire in strength and on the anterior half by six cords, which are much stronger and more distantly spaced, and which render their junctions with the ribs slightly nodulose. A strong tumidity encircles the base at the anterior columellar fold. Aperture narrow; posterior angle acute, decidedly channeled anteriorly; outer lip somewhat sinuous; inner lip reflected over and appressed to the base, provided with three oblique folds which decrease in size successively from the posterior anteriorly; parietal wall covered by a moderately thick callus, which is of equal strength throughout its extent.

The type and another specimen of this species, Cat. No. 219,054, U.S. N. M., Coll. No. 110, were collected by Mr. Weber at Bugsuk Island. The type has 7 whorls remaining and measures: length, 17.2 mm., diameter, 7.1 mm.

***Mitra palawanensis*, new species.**

Shell elongate ovate, Sanford brown, a little paler at the tip. Nuclear whorls decollated in all of our specimens. Postnuclear whorls well rounded, marked by strong spiral keels which are slightly flattened on their summit. Of these keels, three occur between the summit of the whorls and the suture on the early whorls; the summit gradually dropping on the whorls permits a fourth one to be present on the spire of the last turn. The first of these keels, which are equally spaced, is almost as far from the summit as it is from its anterior neighbor. The spaces between the spiral keels, which are about twice as wide as these, are shallow grooves. In addition to the spiral sculpture the whorls are marked by numerous closely spaced, slightly, retractively slanting, incised lines which pass over the spiral keels, but are best marked in the depressions. Periphery of the last whorl well rounded. Base rather elongated, slightly concave in the middle, marked by spiral keels of which six equal those of the spire in strength and spacing. These occupy the posterior two-thirds of the base. Five

additional, much stronger and much more closely spaced cords are crowded on the anterior part of the columella. The incised axial lines referred to on the spire continue over the base. Aperture irregularly very elongate oval; outer lip rendered sinuous by the external ribs, reinforced within by a thick callus; inner lip provided with four oblique folds, which decrease regularly in size from the posterior anteriorly, the last one being only feebly indicated; parietal wall covered by a moderately thick callus.

The type and three specimens of this species, Cat. No. 219,057, U.S. N. M., Collector's No. 122, were collected by Mr. Weber at Brooke's Point, Palawan. The type, which has lost the nucleus, has 6.5 whorls remaining, and measures: length, 14.5 mm., greater diameter, 7.1 mm. One of the four specimens, which has also lost the nucleus and some of the early postnuclear whorls, is considerable larger. It has 6.5 whorls remaining and measures: length, 18 mm.; greater diameter, 8.9 mm.

This species belongs to the group of *Mitra chrysalis* Reeve and *Mitra pregra* Reeve. The National Museum collection also contains two specimens, Cat. No. 32,030, collected by the author at Cataingan Bay, Masbate.

Mitra amanda, new species.

Shell ovate, spire rather short, surface marked by more or less wavy alternating bands of dark chocolate brown and buff. Nuclear whorls decollated in all our specimens, the succeeding turns forming a not very tall, rather broad spire. Whorls strongly rounded, almost appressed at the summit, the early turns marked by about three incised spiral lines which separate the space between the summit and the suture into three equal areas and from there on, the whorls are divided into four subequal spiral zones above the suture. Periphery slightly rounded, base rather long, only very slightly concave, marked by weak, very broad spiral cords which become successively stronger from the periphery anteriorly, excepting the last four, which again are decidedly weaker; there are nineteen of these cords present. In addition to the above sculpture, the entire surface of the shell is marked by rather strongly wavy incremental lines which extend from the summit to the tip of the base. Aperture irregularly elongate oval, decidedly channeled anteriorly, the posterior angle acute; outer lip very much thickened within, somewhat sinuous, rendered wavy by the cords in its anterior half; inner lip reflected over and appressed to the base, provided with four oblique folds which become successively smaller from the posterior, anteriorly. The anterior termination of the inner lip has the appearance of a fifth fold; parietal wall covered by a moderately thick callus. The inside of the outer lip is dark chocolate brown over the anterior three-fourths, while the posterior fourth is bluish white within, edged with chocolate. The columellar folds are bluish white. The rest of the inner lip is dark.

The type and five specimens of this species, Cat. No. 221,815, U. S. N. M., were collected by the author at Dumurug Point, Cataingan Bay, Masbate. The type has lost the extreme tip. The nine whorls remaining measure: length 22.5 mm.; greater diameter, 11.4 mm.

The present species seems to be abundantly represented in the Philippines, and it seems strange that it has been overlooked in the past. It is quite possible that it has been confused with *Mitra paupercula* Linnaeus, from which it is at once distinguished by its less elongate outline and by the presence of the spiral cords which are absent in *paupercula*. It is quite distinct from *M. tigrina* Sowerby, *M. litterata* Lamarek, *M. tornatelloides* Reeve, and *M. virgata* Reeve, which belong to the same group.

We have seen the following additional specimens: Cat. No. 231,815, U. S. N. M., 6 specimens, Cat. No. 231,814, U. S. N. M., 2 specimens, all from Cataingan Bay, Dumurug Pt., Masbate; Cat. No. 231,851, U. S. N. M., 1 specimen from China Sea, Now Wow, Formosa; Cat. No. 231,867, U. S. N. M., 10 specimens from Sabtan Island, Batanes Group; Cat. No. 232,026, U. S. N. M., 1 specimen from Capunuyugan Pt., Mindanao; Cat. No. 231,818, U. S. N. M., 1 specimen from Panabutan Bay, Mindanao; Cat. No. 231,871, U. S. N. M., 2 specimens from Silino Island, Mindanao; Cat. No. 232,034, U. S. N. M., 2 specimens from Little Santa Cruz Island, Mindanao; Cat. No. 231,860, U. S. N. M., 1 specimen from Port Ciego, Balabac; Cat. No. 253,699a, U. S. N. M., 1 specimen from the Philippine Islands.

Mitra arnaloti, new species.

Shell very elongate ovate, white, with numerous axial bands and blotches of rust brown, which increase in width and almost completely cover the last whorl, excepting the periphery, which is encircled by an almost continuous broad white zone, the tip of the base also being white. Nuclear whorls decollated, those succeeding increasing at first gently, then a little more abruptly in size, which lends the extreme apex a slight mucronate aspect. The whorls are marked by five moderately broad low, well rounded cords, which are separated by spaces a little wider than the cords. The first of these is at the summit and the last immediately above the suture. These cords become decidedly enfeebled on the last half of the last turn. In addition to these cords, the whorls are marked by numerous small vertical axial riblets, which differ markedly in strength and spacing. At times they appear almost as varices. On the first four whorls the riblets are reduced to almost incremental lines, but they increase steadily in size beyond this to the last half of the last turn, on which they again become enfeebled. Of these riblets, 56 occur upon the antipenultimate turn. In addition to the above sculpture, the entire surface is marked by exceedingly fine incremental lines and equally fine spiral striations, the combination of the two lending the surface a finely reticulated cloth-like texture. The narrow shouldered summit of the whorls renders the suture well marked. Periphery inflated, well rounded. Base decidedly concave in the middle, marked by the continuations of the axial riblets, which become reduced to mere lines of growth at the anterior portion of the spiral cords; the latter become successively stronger from the periphery to the anterior portion of the base. There are about 22 of these on

the base. Aperture of irregular outline; posterior angle acute, decidedly channeled anteriorly; outer lip reinforced within by a strong callus; inner lip provided with five oblique folds which grow successively weaker from the posterior anteriorly; parietal wall covered by a rather thick callus.

The type and another specimen of this species, Cat. No. 231,946, U. S. N. M., were given to the writer by Father Arnalot, at Davao, Mindanao. The type has lost the nuclear tip. The ten whorls remaining measure: altitude, 35.5 mm.; greater diameter, 15 mm. Another specimen, Cat. No. 231,937, U. S. N. M., was also collected at Davao, Mindanao, by Dr. Mearns. We have seen two additional specimens of this species in the Hon. Jaime C. de Veyra's collection from the Philippines, without specific locality data.

This species is a member of the *Mitra ferruginea* Lamarek complex. It differs from that species by having all the sculpture, both axial and spiral, much more feebly expressed, and the aperture proportionately larger.

Turricula weberi, new species.

Shell of medium size, elongate conic, tip dark with a narrow dark zone at the suture and a broad dark band extending from the periphery over the posterior half of the base. This dark band really consists of two darker elements separated by one of about equal width, of a little lighter shade. Nuclear whorls decollated. Postnuclear whorls moderately rounded, feebly shouldered at the summit, marked by strong, well rounded axial ribs, of which eighteen occur upon the first and second of the remaining turns in the type, twenty upon the third to sixth, and eighteen upon the penultimate turn. These ribs are almost vertical and are about as wide as the spaces that separate them on the early turns, while on the last turn they are much less so. In addition to the axial ribs the entire surface is marked by strong incremental lines. The spiral sculpture consists of strong incised spiral grooves which run equally strongly over the intercostal spaces of the ribs and give to the latter, particularly in the last turn, a somewhat granular appearance. Of these incised spirals, a single only occurs upon the first two turns, while upon the third two are present, the fourth contains three, the fifth seven, the sixth eight, which is also the number between the summit and the periphery on the last turn. On this they are equally spaced, while on the other turns the spacing is irregular. Periphery of the last whorls well rounded. Base slightly contracted in the middle, the anterior half marked by the continuation of the axial ribs, and twelve incised spiral lines which equal those on the spire in strength, but are not as regular in spacing. The anterior half of the base is marked by a strong keel in its middle, the prominent portion of which is almost parallel to the third columellar fold. In addition to this, there are five strong spiral cords posteriorly, and three anteriorly. Aperture of irregular outline, posterior angle acute, decidedly channeled anteriorly; outer lip thin, somewhat sinuous; inner lip reflected and appressed to the base, forming a narrow umbilical chink at the extreme anterior end, pro-

vided with four strong oblique folds, of which the posterior is the strongest, while the other three decrease in size successively; parietal wall covered with a thin callus except at the posterior angle of the aperture, where it is decidedly thickened.

The type and another specimen of this species, Cat. No. 219,052, U. S. N. M., Collector's No. 107, were collected by Mr. Weber at Bancalan Island. The type has lost the nuclear tip and probably the first one and a half postnuclear turns. The seven and a half remaining whorls measure: length, 27.2 mm.; greater, 10.9 mm.

***Turricula bancalanensis*, new species.**

Shell small, elongate ovate, the spire flesh colored except the narrow dark zone on the suture; in the last whorl the posterior half of the whorl is encircled by a light brown band, the rest of the shell being flesh colored. Nuclear turns one and a half, strongly rounded, smooth, forming a somewhat mamillated apex. Postnuclear turns roundly shouldered at the summit, well rounded, marked by strong, broad, slightly protractive axial ribs, of which sixteen occur upon the first to fifth, fourteen upon the sixth, and twelve upon the penultimate turn. These ribs become slightly enfeebled at the summit, and evanesce on reaching the anterior half of the base. In addition to the axial ribs the entire surface of the shell is marked by very fine lines of growth. The spaces between the ribs are a little wider than the ribs and are crossed by three incised pits between the summit and the suture, the space between the summit and the first being the widest, while that between the first and second equals the space between the suture and the third in width, the space between the second and third being a little wider than the last named. Suture strongly marked. Base rather prolonged, slightly concave at the insertion of the columella, the posterior third marked by six incised spiral lines, which are less regularly spaced than those on the spire. The anterior two-thirds of the base is marked by eight irregular, broad, low, rounded spiral cords. Aperture irregularly elongate oval, posterior angle acute, decidedly channeled anteriorly; outer lip thin, somewhat sinuous; inner lip provided with four oblique folds of which the posterior is the strongest, the others becoming successively weaker; parietal wall covered by a thin callus anteriorly, and a much thicker one at the posterior angle of the aperture.

The type and two immature specimens of this species, Cat. No. 219,053, U. S. M. N., were collected by Mr. Weber at Bancalan Island. The type has 8.5 whorls and measures: length, 10.6 mm.; greater diameter, 4 mm.

***Columbella deveyrai*, new species.**

Shell small, ovate, marked by alternating irregular axial zigzag bands of white and blackish brown, which are of about equal width. Nuclear whorls decollated. Postnuclear whorls strongly rounded, inflated, smooth excepting fine incremental lines. Suture strongly constricted. Periphery of the last whorl inflated. Base rather long, concave in the middle, the

extreme posterior portion smooth, the anterior three-fourths marked by twelve incised spiral lines which become irregularly more closely spaced from the suture anteriorly, and the spaces between them become regularly more elevated, forming broad low rounded cords in the columellar region. Aperture irregular, decidedly channeled anteriorly, posterior angle obtuse; outer lip somewhat sinuous, reinforced by a strong callus within, which bears twelve strong oblique denticles; columella with two oblique folds. The extreme outer edge of the columellar callus provided with seven strong denticles; parietal callus becoming thickened toward the posterior angle of the aperture.

The type, Cat. No. 310,052, U. S. N. M., comes from the Batanes Islands. It has 5 whorls remaining, and measures: altitude, 9.4 mm.; greater diameter, 5.7 mm.

I take great pleasure in naming this species for the Hon. Jaime C. de Veyra, Resident Commissioner from the Philippine Islands, whose interest in the natural history of our island possessions is aiding materially in increasing our knowledge of their faunas.

***Sigaretus weberi*, new species.**

Shell decidedly depressed, lenticular, pale yellow with a suffusion of rusty red on the last turn. Nepionic whorls well rounded, smooth, very small, the first turn and a half pale brown, the rest white. The nepionic portion appears to coil very regularly and the turns increase but slightly in size, while the whorls of the succeeding turns increase exceedingly rapidly in width. Immediately after the nepionic whorls the upper surface of the whorls becomes marked by numerous, closely crowded incremental lines, which appear as slender threads under the microscope and in addition to this by very numerous very fine raised threads, the combination of the two forming a clothlike texture. On the last quarter of the last turn the spiral element becomes evanescent. The spiral sculpture is not at all apparent to the naked eye on any part of the upper surface. Periphery of the last whorl with a well rounded angle. Base marked by numerous incremental threads, but without microscopic spiral sculpture. Aperture, considering the outlines of the lips only, broadly oval, the outer lip projecting as a broad clawlike element, while the inner lip is evenly curved and very slightly reflected. If one looks at the shell absolutely vertically the twist of the columellar edge appears as a slight perforation that extends to the apex of the shell; parietal wall glazed with a thin callus.

The type and another specimen, Cat. No. 219,050, U. S. N. M., were collected by Mr. Weber at Alfonso XIII, Palawan. The type has 4.1 whorls and measures: altitude, 7.1 mm.; greater diameter, 27.6 mm.; lesser diameter, 18.6 mm.

The National Museum collection contains this species from two other localities; namely, Cat. No. 243,278b, U. S. N. M., Pasig Beach, Manila, and Cat. No. 240,292, U. S. N. M., Port Carlton, Busuanga. It is possible that this is the shell which has been passing under the name of *Turricula planulata* Recluz, which is an entirely different species, having its home in the Seychelle Islands.